

DESCRIPTIONS OF SOME NEW SPECIES OF MONKEYS OF
THE GENERA PITHECUS AND PYGATHRIX COLLECTED
BY DR. W. L. ABBOTT AND PRESENTED TO THE UNITED
STATES NATIONAL MUSEUM.

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The examples upon which the following species were based were procured, with the exception of the type of *Pygathrix ultima*, by Dr. W. L. Abbott from the islands of the Eastern Archipelago.

Genus PITHECUS.

PITHECUS LAPSUS, new species.

Macaca phæura (NOT MILLER) LYON, Proc. U. S. Nat. Mus., vol. 31, 1906, p. 606.

Type-locality.—Island of Banka, east of southern Sumatra.

Type.—Cat. No. 124863, U.S.N.M.

Geographical distribution.—Islands of Banka and Billiton.

General characteristics.—Similar to *P. phæura*, but much darker; rostrum shorter and narrower, premaxillæ lengthened, protruding.

Color.—Frontal streak black, conspicuous, broader than in *P. phæura*; top of head, upper parts of body, and outer side of arms and thighs covered with hairs, pale drab at base and annulated on apical half with black and tawny ochraceous; legs below knees gray, hairs tipped with buff; cheeks, underparts and inner side of limbs buffy smoke gray; hands similar to outer side of arms; feet yellowish gray; tail blackish at base above, grading into gray at tip, beneath smoke gray.

Measurements.—Total length, 955 mm.; tail, 520; (Coll.) foot, 124; (skin); skull, total length, 113.8; occipito-nasal length, 94.7; hensel, 80.2; zygomatic width, 76.2; intertemporal width, 37.5; palatal length, 43.7; median length of nasals, 22.7; length of upper molar series, 28; length of mandible, 83; length of lower molar series, 36.3.

The color of this species is very different from *P. phæura* Miller, is much darker generally and not so yellow in tone, while the feet are yellowish gray, quite different from the dark feet of its ally. The skull also shows important differences, while the geographical distribution of the two forms would seem to negative the idea that they were the same species.

PITHECUS AGNATUS, new species.

Type-locality.—Pulo Tuangku, Banjak Islands.

Type.—Cat. No. 114409, U.S.N.M.

General characteristics.—Nearest to *P. phœura*, but paler; hands, feet, and tail lighter.

Color.—Black bar on forehead, rather indistinct; top of head, hind-neck and upper parts with the hairs gray at base, then banded with ochraceous and black and tipped with black, giving a general ochraceous hue with a sienna tinge, without any of the tawny shade seen in *P. phœura*; arms and hands gray, hairs tipped with cream buff; outer side of thighs like back; legs and feet smoke gray; underparts and inner side of limbs yellowish white; tail above, black at roots, hairs tipped with ochraceous, grading into pale smoke gray on apical half, beneath pale gray; a band of russet crosses beneath the chin.

Measurements.—Total length, 953 mm., tail, 530; skull, total length, 107; occipito-nasal length, 88.4; hensel, 75.9; intertemporal width, 39.3; zygomatic width, 74.1; palatal length, 45.6; median length of nasals, 28.1; length of upper molar series, 28.5; length of mandible, 78.2; length of lower molar series, 35.3.

This macaque is allied to *P. phœura*, but differs in its general paler coloration, and lighter hands, feet, and tail. Four examples were obtained by Doctor Abbott at Tuangku Island.

PITHECUS LINGUNGENSIS, new species.

Type-locality.—Pulo Lingung, Natuna Islands.

Type.—Cat. No. 104853, U.S.N.M.

General characteristics.—Tooth row long; general color of fur reddish.

Color.—Top of head and upper parts rich tawny and black, base of hairs grayish; outer side of limbs, hands and feet gray; hairs banded and tipped with cream buff; underparts and inner side of limbs yellowish white; tail above at root like back, remainder brownish black, hairs barred with cream buff, beneath smoke gray.

Measurements.—Total length, 847 mm.; tail, 574; skull, total length, 108.8; occipito-nasal length, 91.8; hensel, 75; intertemporal width, 87.9; palatal length, 45.8; median length of nasals, 27; length of upper molar series, 30.4; length of mandible, 78.5; length of lower molar series, 37.7.

The general appearance of this macaque is totally unlike *P. sirhasensis* on the south, and while the skulls of the two forms have a general resemblance to each other, the present species has a narrower brain case, longer tooth rows, and smaller incisors, these last being intermediate between the species just named and *P. lautensis*. One specimen only was obtained by Doctor Abbott.

PITHECUS LAUTENSIS, new species.

Type-locality.—Pulo Laut, Natuna Islands.

Type.—No. 104854, U.S.N.M.

General characteristics.—Resembling *P. lingungensis*, but not so red; skull entirely different.

Color.—Top of head and upper parts tawny ochraceous and brownish black; arms and hands bluish gray, hairs tipped with cream buff; outer side of thighs similar to back; legs olive gray; feet darker, being brownish gray; underparts and inner side of limbs silvery gray; tail above blackish brown, becoming gradually paler toward tip, beneath whitish gray.

Measurements.—Total length, 1,018 mm.; tail, 548; skull, total length, 112.2; occipito-nasal length, 95.3; hensel, 80.7; intertemporal width, 39.8; zygomatic width, 82.7; palatal length, 45.7; breadth of brain case, 54.5; median length of nasals, 27.1; length of upper molar series, 27.1; length of mandible, 84.1; length of lower molar series, 36.1.

This macaque is very similar in color on body and head to *P. lingungensis*, but is very different in the color of the limbs, arms particularly. The main differences are to be found in the skull. This has a very broad facial region and space across orbits very wide; orbital ridge very heavy; the brain case is larger in every way, and the roots of the zygomata broader and heavier; palate is wider; basi-occipital and basi-sphenoid broader and longer and the zygomatic arch more widely spread. The outer edge of the occipital region in *P. lingungensis* is rounded, but in the present species it is pyramidal without the point. Incisors are smaller. Altogether the two skulls are as different as they well can be of species belonging to the same genus. One example only procured.

PITHECUS SIRHASSENENSIS, new species.

Type-locality.—Sirhassen Island, Natuna Group.

Type.—Cat. No. 104852, U.S.N.M.

General characteristics.—General hue very dark, limbs and feet paler; skull in general characters nearest to *P. lingungensis*, but tooth rows much shorter.

Color.—Top of head, upper parts of body, and outer side of thighs blackish brown and ochraceous, the hairs gray at base, then banded with ochraceous and black and tipped with black; limbs, hands, and feet pale gray, hairs banded with cream buff; underparts and inner side of limbs grayish white; tail above at base, blackish, hairs ringed with ochraceous grading into smoke gray for remaining part; beneath smoke gray.

Measurements.—Total length 1,110 mm.; tail, 600; skull, total length, 113.3; breadth of brain case, 54; intertemporal width, 40.5;

palatal length, 47; median length of nasals, 27; length of upper molar series, 27.6; length of mandible, 77.7; length of lower molar series, 35.5.

This species is very dark in color, differing greatly from the other macaques of this group of islands. The skull agrees more nearly with that of *P. tinguangensis*, but the tooth row is much shorter, the palate wider, and the brain case broader.

PITHECUS VITIIS, new species.

Type-locality.—Domel Island, Mergui Archipelago.

Type.—Cat. No. 124176, U.S.N.M.

Geographic distribution.—Domel, St. Matthew, and Sullivan islands, Mergui Archipelago.

General characteristics.—Hair long, loose, hands and feet yellowish gray.

Color.—Top of head and upper parts wood brown, darkest over dorsal line and lighter on sides, the hairs being gray at base, and banded with black and yellow over apical half; arms and hands similar to back; thighs like back, legs pale yellowish brown; feet slightly darker; underparts and inner side of limbs yellowish gray; tail above blackish brown, at root like back, beneath yellowish brown.

Measurements.—Total length, 935 mm.; tail, 495; skull, total length, 116.6; occipito-nasal length, 99.7; hensel, 80.4; zygomatic width, 76.6; intertemporal width, 43.7; palatal length, 44.6; median length of nasals, 28.4; length of upper molar series, 34; length of mandible, 86; length of lower molar series, 39.5.

This is a gray hand and foot macaque quite different from the Javan gray-handed species *P. mordax* and *P. resimus*, as is to be expected. Specimens were obtained by Doctor Abbott, beside the type-locality, on St. Matthew and Sullivan islands of the same archipelago. One was a very old male in faded pelage, and another a female closely resembling the male described above.

PITHECUS CARIMATÆ, new species.

Type-locality.—Telok Pai, Karimata Islands.

Type.—Cat. No. 125101, U.S.N.M.

General characteristics.—Similar to *P. mandibularis* from Sungei Sama, near Pontianak, Borneo, but grayer and without the tawny hues of that species. Skull with the tooth rows straight, not curved; teeth larger and tooth rows longer; palate deeper, longer, and wider; incisors narrower in both jaws; orbits smaller; narial opening much larger; intertemporal breadth less; brain case shorter and narrower; mandible stouter, horizontal portions deeper.

Color.—Space around eyes bare, flesh color; superciliary stripe gray; above which is a narrow black bar across forehead; top of

head, neck, upper parts and outer side of thighs mottled blackish-brown and buff, with a grayish wash, the hairs being gray at base, which shows through, then annulated with buff and black, and black-tipped; flanks gray; outer side of arms and hands dark grayish, hairs ringed with whitish; legs uniformly gray; feet gray with brownish tinge; tail above black, tip smoke gray, beneath soiled white.

Measurements.—Total length, 1,115 mm.; tail, 655; foot, 144; skull, total length, 114; occipito-nasal length, 95.8; intertemporal width, 39.9; zygomatic width, 77.5; palatal length, 48.3; median length of nasals, 28.1; length of upper molar series, 30.1; length of mandible, 85.6; length of lower molar series, 37.2. This is a large macaque with a very long tail and of a generally grayish-brown color. It does not closely resemble any known species.

PITHECUS MANDIBULARIS, new species.

Type-locality.—Sungei Sama, near Pontianak, Borneo.

Type.—Cat. No. 142225, U.S.N.M.

General characteristics.—Similar in coloration to *P. fascicularis*, but paler, less red, and the ascending ramus of mandible narrower, higher, and with a backward inclination.

Color.—Upper parts ochraceous buff; the hairs being gray at base and then banded with black and ochraceous buff, the latter color dominating; top of head more tawny; whorl on cheeks and below ears gray; outer side of arms and hands gray, speckled with yellow; outer side of thighs like back; legs below knees and feet smoke gray, unspotted; underparts and inner side of limbs whitish; tail above blackish, paler toward tip, beneath buffy gray.

Measurements.—Total length, 1,015 mm.; tail, 570; foot, 140; skull, total length, 112; occipito-nasal length, 95.9; zygomatic width, 77; intertemporal width, 41.7; palatal length, 45; median length of nasals, 26.9; length of upper molar series, 28; length of mandible, 80.9; length of lower molar series, 34.8; width of ascending ramus at middle, 22.3; at top, 23.3; extreme perpendicular height, 38.1.

The great difference in the shape of the ascending ramus persists in all the skulls, and when compared with that of *P. fascicularis* renders its narrowness and height conspicuous. The size of the ascending ramus of *P. carinata* is about halfway between those of the Bornean and Sumatran macaques, and in the color of its pelage it is quite unlike both.

PITHECUS BAWEANUS, new species.

Type-locality.—Bawean Island, Java Sea.

Type.—Cat. No. 151829, U.S.N.M.

General characteristics.—Larger than *P. cupidus*, the next species, from Mata Siri Island, and tail dark hair brown with an olive tinge. General hue more yellowish.

Color.—Nude yellowish spot above eyes; face covered with short gray hairs; short black bar above eyes; top of head and entire upper parts dark buff yellow and black; hair gray at base and then banded with buff yellow and black and tipped with black; outer side of arms and hands more grayish than upper parts, base of hairs being bluish gray and banded with cream buff and tipped with black; outer side of thighs like back; legs from knees to ankles, and feet gray, with cream-buff annulations less numerous and distinct than on arms; whorl on side of head below ears whitish gray with a cream-buff edging; throat, underparts and inner side of limbs, yellowish white; tail above, blackish brown at base, speckled with buff; remainder dark hair brown, beneath olive gray.

Measurements.—Total length, 1,052 mm.; tail, 580; foot, 141; skull, total length, 127; occipito-nasal length, 106.7; hensel, 90; intertemporal width, 41.3; zygomatic width, 88.9; palatal length, 51.9; median length of nasals, 22.3; length of upper molar series, 34.9; length of mandible, 89.1; length of lower molar series, 36.9.

This species differs from its nearest ally *P. cupidus*, by having the bands on hairs much paler, and a more olive tail. The skulls, however, are entirely dissimilar, that of the present species being much larger. The rostrum is broader and heavier, nasals wider, orbital ridges heavier and more elevated in center; low crest higher and shorter, the two lateral ridges not uniting until they reach the posterior portion of the frontal; occipital region has a more acute angle; bullae more inflated; palate wider; tooth rows curved posteriorly, the last molar set inwards on both sides; incisors projecting at a more acute angle; zygomatic arch curved and with considerable spread. The skulls of these two macaques possess unusually numerous points of difference not often seen in allied species.

PITHECUS CUPIDUS, new species.

Type-locality.—Pulo Mata Siri, Java Sea, 44 miles from Pulo Laut.

Type.—Cat. No. 151831, U.S.N.M.

General characteristics.—Size moderate; hands and feet yellowish; tail longer than head and body; hair radiating fan-like from ears.

Color.—Space above eyes nude, flesh color, or yellowish; face covered with very short grayish-white hairs; cheeks and sides of head yellowish gray, hair long and radiating forward from ears, fan shape; top of head and entire upper parts, general tone ochraceous buff and black, the hairs gray at base and banded with ochraceous buff and black and tipped with black; flanks gray and with a yellow tinge; arms and hands, legs and feet cream buff and dusky, the hairs dusky at base, barred with cream buff and black, and tipped with the latter color; throat, chest and entire under parts of body, and inner side of limbs whitish; tail above brownish black for three-

fourths the length grading into grayish brown at the tip; beneath brownish olive.

Measurements.—Total length, 975 mm.; tail, 540; foot, 127; skull, total length, 117.3; occipito-nasal length, 97; hensel, 84.2; zygomatic width, 80.7; intertemporal width, 36.5; palatal length, 50.7; median length of nasals, 21.2; length of upper molar series 30; length of mandible 60.7; length of lower molar series 37.5.

This species is quite unlike *P. mordax* from Java, but nearer the one from Bawean Island, from which, however, it is easily distinguished by its blackish brown tail. All these Javanese macaques appear to have the forward fan-shaped radiation of the hair from the ears, a peculiarity belonging, however, to others of the genus, but usually with a more circular radiation not so much confined to a forward movement.

The skull is very different from the Bawean Island macaque, being much smaller with a narrow rostrum, decreasing in width towards incisors; the zygomatic arch has very little expansion and is parallel with the skull, being practically straight without curve; orbits much higher than wide; a low ridge is present from frontal to occiput formed of inner ridge-like edge of orbits uniting on anterior part of the frontal, dividing again at interparietal and joining the occipital ridge on either side; tooth rows straight, palate narrow; upper incisors projecting.

PITHECUS LINGÆ, new species.

Type-locality.—Linga Island, Rhio Archipelago.

Type.—Cat. No. 101603, U.S.N.M.

General characteristics.—Size medium; hands brownish; feet whitish gray; hair long, loose.

Color.—Broad black band across forehead; top of head, neck, upper parts and outer side of thighs, rusty in certain lights, less red in others, and paler on the thighs, the hairs being dark brown at base, then barred with dark ochraceous and black and tipped with black; outer side of arms and hands dark brown, washed with buff; the hairs being dark brown at base, then barred and tipped with buff; legs smoky gray with a slight yellow tinge; feet whitish gray, hairs being brown with white tips; hair scanty; under parts and inner side of limbs, whitish; tail above like back at root, then black, changing to slate gray at tip; beneath smoke-gray.

Measurements.—Total length, 782 mm.; tail, 560; skull, total length, 111.5; occipito-nasal length, 93.9; hensel, 80; intertemporal width, 40.4; zygomatic width, 76.5; palatal length, 45.7; median length of nasals, 29.3; length of upper molar series, 29.4; length of mandible, 84.9; length of lower molar series, 37.7.

This is a reddish hued macaque with a long, loose coat of hair and a long tail, not very much like any of the other species. It varies in coloration, for another male taken on the same day, July 23, has none of the reddish hue so strongly exhibited by the type, and is more of a dark-brown hue, with a yellowish tinge. The limbs and tail are also much lighter. The skull is short and broad for its length; palate broad and the tooth rows slightly curved; teeth rather large, last premolar and molars each with four cusps; teeth of lower molar series smaller than those in the upper.

PITHECUS IMPUDENS, new species.

Type-locality.—Pulo Sugi, Rhio Archipelago.

Type.—Cat. No. 115675, U.S.N.M.

General characteristics.—Size medium, tail very long. Skull with rostrum narrow anteriorly; incisors very small; posterior edge of last molar not reaching palatal arch; tooth rows curved; nasals comparatively long, broad anteriorly; tail longer than head and body.

Color.—Space above eyes bare, flesh color, face covered with short white hairs; narrow black hairs on forehead; top of head and upper parts ochraceous and black, the hairs annulated with these colors and gray at base; outer side of thighs similar to back but paler; flanks grayish; arms and hands dark brownish gray and buff; legs smoke gray; feet similar with a yellowish tinge; under parts and inner side of limbs whitish; tail above blackish on basal half, smoke gray on remainder, beneath yellowish white.

Measurements.—Total length, 962 mm.; tail, 522; skull, total length, 109.3; occipito-nasal length, 92.6; hensel, 73.4; intertemporal width, 38; zygomatic width, 72.6; palatal length, 42.7; median length of nasals, 26.7; length of upper molar series, 27.1; length of mandible, 77.9; length of lower molar series, 34.1.

PITHECUS CAPITALIS, new species.

Type-locality.—Trong, Lower Siam.

Type.—Cat. No. 83271, U.S.N.M.

Geographical distribution.—Lower Siam and Telibon Island.

General characteristics.—Nearest to *P. fascicularis* with gray hands and feet, but without the reddish hue on head and neck. Skull much larger and very different in character.

Color.—Top of head and entire upper parts yellowish brown, the hairs gray at base, then banded with dark brown and yellow; limbs, hands, and feet grayish brown; inner side of limbs yellowish; tail above dark grayish brown, beneath yellowish white.

Measurements.—Total length, 1,143 mm.; tail, 635; skull, total length, 123; occipito-nasal length, 103.7; intertemporal width, 45; hensel, 87.7; zygomatic width, 89.8; palatal length, 53.5; median

length of nasals, 31; length of upper molar series, 32; length of mandible, 97.1; length of lower molar series, 40.1.

The example described has a very worn coat and hairs thinly dispersed on limbs and under parts. While the coloring is dissimilar to *P. fascicularis*, the great difference between that species and the Trong macaque is in the size and shape of the skull and teeth. The skull of the Sumatran species, although the animal was about of the same age, is one-third smaller. The Trong skull has a low crest from the midfrontal to the occiput; the rostrum is longer and broader; zygomatic width greater; nasals wider; bony palate deeper and longer; teeth larger; incisors more than twice as large; mandible longer and heavier, the ascending ramus broader and longer with a very slight inclination backward. A single specimen, a male, from Telibon Island has a different skull, is much smaller and a somewhat different color, and may eventually prove distinct, but at present I leave it under the name of the Trong macaque.

Genus PYGATHRIX.

PYGATHRIX ULTIMA, new species.

Type-locality.—Mount Dulit, Borneo, 3,000 feet elevation.

Type.—Cat. No. 83949, U.S.N.M. Collected by E. and C. Hose.

General characteristics.—Similar in color to *P. cristatus*, but cranial characters very different. The skull compared with that of *P. cristatus*, two adult males, is generally larger; rostrum and brain case longer and narrower; septum broader, tooth row almost straight; teeth larger and tooth rows longer; pterygoidfossa longer and pterygoids not so widely flaring; bullae much less inflated; in fact compressed and reduced; palate longer and narrower; the lower edge of mandibular angle much more rounded, and the lateral pit in the ascending ramus shallower and smaller.

Color.—Like *P. cristatus*, but averaging slightly darker.

Measurements.—Total length, 1,370 mm.; tail, 820 (skin); skull, total length, 104.2; occipito-nasal length, 87; hensel, 75.3; zygomatic width, 77; intertemporal width, 42.5; palatal length, 38.9; width, 19.4; median length of nasals, 15.1; length of upper molar series, 39; length of mandible, 75.7; length of lower molar series, 36.5.

PYGATHRIX SANCTORUM, new species.

Type-locality.—St. Matthew Island, Mergui Archipelago.

Type.—Cat. No. 104446, U.S.N.M.

General characteristics.—Similar in color to *P. obscura carbo* from Terutau and Lankawi islands, Straits of Malacca, but cranial characters quite different. Teeth large; tooth rows, rostrum and palate longer; palatal arch pointed, reaching nearly to posterior edge of second molar; pterygoids much larger and widely spaced; pterygoid fossa con-

tracted, widening at posterior edge of palate; basi-occipital wider, the lateral pits much smaller; zygomatic arch longer and more curved; occipital region broader; brain case longer and wider and orbits higher than wide, not round; mandible and lower tooth row longer.

Color.—Very like *P. o. carbo*, except the nuchal crest is creamy white and the tail is pale buffy gray.

Measurements.—Total length, 703.20 mm.; tail, 508; skull, total length, 98.8; occipito-nasal length, 81.7; hensel, 70.5; zygomatic width, 73.8; intertemporal width, 40.6; palatal length, 31.2; length of upper molar series, 27.3; length of mandible, 67.1; length of lower molar series, 31.3.

The island allies of *P. obscura* are apparently characterized by having much larger teeth than are seen in typical individuals and by the many cranial distinctions mentioned above.

PYGATHRIX FLAVICAUDA, new species.

Type-locality.—Trong, Lower Siam.

Type.—Cat. No. 83259, U.S.N.M.

General characteristics.—Belonging to *P. obscura* group, but legs from hips pale smoke gray and tail cream color.

Geographical distribution.—Lower Siam and southern Tenasserim; Kisseraing and Sir William James islands, Mergui Archipelago.

Color.—Face bare, upper lip and space over eye flesh color, darker about nose and beneath eyes. Hairs on forehead long upright and extending to ears brownish black; hairs on lips and lower cheeks long and extending backward beyond ears blackish; top of head and nape yellowish white; dorsal line mummy brown, paler than back; rest of upper parts and flanks black tinged with brown; outer side of arms very dark hair brown with a reddish tinge on shoulders and grading into black on wrists and hands; throat sparsely covered with dark brown hairs; under parts grayish brown; outer side of legs smoke gray with a brownish tinge from knee to ankle; feet blackish; tail uniform cream color.

Measurements.—Total length, 1,257 mm.; tail, 724; skull, total length, 94.7; occipito-nasal length, 77; hensel, 66.5; zygomatic width, 70; intertemporal width, 40.7; palatal length, 32.7; median length of nasals, 93; length of upper molar series, 24.4; length of mandible, 68.6; length of lower molar series, 30.

This very distinct species can at once be recognized by its cream color tail and pale legs. The examples from the islands, consisting of only a male and female, differ slightly in certain particulars. The legs are even paler than those of the type, hands and feet jet black, strongly contrasted with the arms and legs, and the skulls have a flatter brain case and broader rostrum. The material is hardly sufficient to enable a definite decision to be reached, and I leave these island examples under the name of the present species.